Overall, this is a very well organized, clearly presented book. It is a fairly comprehensive introduction to the theory of orthogonal rational functions.

Xin Li
E-mail: xli@pegasus.cc.ucf.edu
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P. K. Kythe, *Computational Conformal Mapping*, Birkhäuser, Boston, 1998, xv + 462 pp.

The mathematics literature is not rich with texts in numerical conformal mapping. The main contributions in this area are (a) the book by von Koppenfels and Stallmann [5], written in 1959; (b) the classic monograph by Gaier [1] which, although written in 1964, is still very relevant; (c) Volume III of Henrici's "*Applied and Computational Complex Analysis*" [2]; (d) the collection of papers on numerical conformal mapping which was edited in 1986 by Trefethen [9]. There are also the two more recent books by Ivanov and Trubetskov [4] and Schinzinger and Laura [7], but these concern mainly applications and do not purport to cover the whole range of numerical conformal mapping techniques. Thus, I was particularly excited to receive this latest addition to the literature of numerical conformal mapping. Unfortunately, my initial anticipation was dampened considerably on closer reading.

The book consists of 15 chapters and 5 appendixes. The topics covered include the Schwarz–Christoffel method, various expansion methods such as the Bergman kernel, the Szegő kernel and the Ritz methods, the mapping of nearly circular regions, the numerical

the Szegő kernel, the Theodorsen integral equation method, the method of Wegmann, the mapping of doubly and multiply connected regions, airfoils, the treatment of corner and pole-type singularities, and a discussion on the use of conformal mapping for grid generation.

According to the author "*the book is intended to contribute to an effective study program at the graduate level and to serve as a reference book for scientists, engineers and mathematicians in industry*." Unfortunately, I am not convinced that this aim has been fulfilled. In my view, the book is a welcome addition to the existing literature, but only as an auxiliary text that can serve to indicate some of the more recent developments of the subject and to direct those interested to appropriate references. In this context, the extensive bibliography and the introductory chapter (Chap. 0), which sets the historical background of the subject and describes some of the modern developments in the area, are particularly helpful.

On the other hand, I do not think that the book can be used on its own, as a self-contained text, for the detailed study of the subject. My main criticism is that the book is not well organized. As a result, the overall presentation lacks coherence. In particular, the material is often presented in a fragmented manner, by selecting particular sections directly from the original sources, without making an effort to provide the additional explanations and links needed for continuity and ease of understanding. A typical example of this is the material concerning the singularities of the mapping function, in Section 9.5 and Chapter 12. There are also some rather dubious statements. For example, in Section 9.2 and in other parts of the book, the numerical integral equation method of Symm [8], which has nothing to do with orthonormal polynomials, is called the "*orthonormal polynomial method* (*ONP*)" and is, incorrectly, attributed to Rabinowitz [6].

Another criticism concerns the end-of-chapter exercises (problems). These often refer to research items, of rather technical nature, which can hardly be regarded as problems that a student (even an advanced graduate student) would be in a position to tackle. The following examples suffice to illustrate this: (i) Problems 8.10.1, 8.10.2, and 8.10.3 require the proofs of three major theorems and the development of a major algorithm, all taken from research papers. (ii) In Problem 12.7.8 the reader is asked to accomplish an impossible task, i.e., to "*determine*" the Bergman kernel function $K(z, 0)$ associated with an octagonal region. Even the determination of an approximation to $K(z, 0)$ will, in this case, require very substantial computational effort. Similar remarks apply to Problems 12.7.7 and 12.7.9. (iii) Problem 4.6.5 (p.119), which is given at the end of Chapter 4, bears no obvious relation to the material covered in this chapter. In particular, the definition of the region G^*, which is referred (without any explanation) in this problem, is given much later in Section 12.4 (p. 331).

Finally, it is I think a pity that, in a book on computational conformal mapping, the well-established and widely used Schwarz–Christoffel conformal mapping package SCPACK of L. N. Trefethen is referenced in the book but, as far as I could see, not mentioned in the text and that the conformal mapping package CONFPACK of Hough [3] (which is based on the integral equation formulation of Symm) is neither mentioned nor referenced.

The book comes with an errata list, but there are still some errors that were not noticed. For example: (i) In Section 1.3, p. 27, it is stated that the function $1/r = 1/\sqrt{(x-x_0)^2+(y-y_0)^2}$ is harmonic in a two-dimensional region that does not contain the point (x_0, y_0). (ii) The statement of Problem 12.7.1, p.351, incorrectly refers to Eqs. (10.2.6) and (10.3.5), instead of (12.2.6) and (12.3.5).

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Nicolas Papamichael
E-mail: nickp@pythagoras.mas.ucy.ac.cy
doi:10.1006/jath.2000.3519

S. Ya. Khavinson, *Best Approximation by Linear Superpositions* (*Approximate Nomography*), Translations of Mathematical Monographs **159**, American Mathematical Society, Providence, RI, 1997, vii + 175 pp.

In most calculus texts superpositions of functions are studied along with two other operations, namely addition and multiplication, with respect to properties such as continuity, differentiability, integrability, and so forth. Addition and multiplication of functions are further studied intensively through almost all branches of mathematical analysis (Banach spaces of